



STANFORD UNIVERSITY MEDICAL CENTER

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STANFORD UNIVERSITY SCHOOL OF MEDICINE  
Department of Genetics

June 1, 1971

Dr. William F. Raub  
Special Research Resources Branch  
Division of Research Resources  
National Institutes of Health  
Bethesda, Maryland 20014

Dear Bill,

Re.: Grant No. RR-00311-06

The annual report and continuation proposal for the ACME project is in university administration channels and should be in the mail to you very shortly if not already. I thought I would take the occasion to send you a couple of copies for your advanced notice and to make some further comments on where we stand at the present time.

The report documents in some detail the technical accomplishments of bringing ACME up to a reliable time sharing computer service. We can I think take substantial pride in the work done by a very competent, dedicated, and knowledgeable team. We also know that we have educated literally hundreds of medical research investigators and potential care-providers with the skill and insight needed to exploit this tool in the future. But we also appreciate very well the need to move on to new bases for the conceptualization and support for the medical school computer system. The planning efforts that we started about two years ago did not come to a sharp focus until recently for a number of reasons. These included fluctuating uncertainties about patterns of funding for research projects that might be users of computer facilities, turnover of key personnel in the Stanford computer center and some indecision on our own part about sponsoring new kinds of medical information system studies. The last, in turn, was of course complicated by our being caught between deans.

As you know, a number of concrete, modestly large scale programs have been identified and will proceed as major projects under the ACME framework - for example, we hope, Stan Cohen's drug interaction project, and my own work with DENDRAL. However, the general economic and technical climate for computing has also been undergoing rapid change and had we made more drastic plans two years ago they probably would have been obsolete at this moment anyhow.

Recently the Stanford computer center has undergone a dramatic re-organization, accompanied also by the appointment of Professor William Miller as the provost and academic vice president of the university. Computer-related problems therefore now have an unusually high priority of concern in the central councils of the university on the part of knowledgeable people. We have then been able to implement what we aspired to before, namely, a very detailed analysis involving the best expertise of the Stanford computer center as well as ourselves in making further plans. Such a study is actively under way, for example, towards a cost and

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technical analysis of the benefits and disadvantages of mounting an interactive, PL/ACME-based time sharing system on the Stanford campus facility, the 360-67. This has the potentiality of furnishing conversational computer services at considerable savings based on economy of scale. However, it would also involve a substantial investment of system effort in order to protect the multitudinous users on the present ACME system from intolerable injury. It will take us another three to four months to come to reasonable decision points on this analysis. The most we can say at the present time is that the feasibility and cost effectiveness of such a move are not yet excluded.

If this would happen there would obviously be major structural changes in the ACME system both from the standpoint of hardware and the way in which we are organized to facilitate the use of computer capabilities by the medical research community. We believe, however, that the planning of the next generation system, one which would take advantage of all that we have learned thusfar in furnishing reliable computer capability, should be the principal new task to which we address ourselves for the duration of the present grant. Indeed, we feel obliged to request that you authorize an extension of fifteen months from the present schedule date of termination in order to give us a realistic opportunity to prepare an effective proposal for the renewal of support on what may be a drastically modified basis. Any attempt to implement alternative systems on a shorter time scale than this would probably be more expensive in the long run and stand a large chance of injuring and alienating a considerable number of our users.

Other system objectives are also outlined in the report. I would particularly call your attention to the brief summary on pages 2-5. We have in mind technical efforts to increase the feasibility of computer communications involving, on the one hand, small laboratory based machines within the school and on the other not only the major center facilities on campus but also access to the national network now being put together. It will be difficult, realistically speaking, to make much headway on these efforts within the confines of our present budget ceiling. We, therefore, hope to be able to negotiate with you some basis whereby direct grant funds from your office may be retained for such development efforts, especially insofar as we may be able to augment our utility revenues from user fees with progressively less heavily subsidised rate structures during the next year or two.

In summary let me emphasize that, having now reached a point of generally accepted technical excellence, we are very much concerned about providing services on an economically feasible basis. The planning and the changes themselves will, however, require further investment which we believe should be amortized not only from local revenues but with an appreciation for the overall impact of the progress of our program on the state of the art available to health research generally.

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As I have already mentioned to you, the applications of computers are now very well represented in the university administration and I foresee a similar modernization of outlook with the impending appointment of a new dean of the school of medicine.

Sincerely yours,

Joshua Lederberg  
Professor of Genetics

JL/rr

CC: JAH TGAARD  
FEIGENBAUM  
EDINA  
ECL  
Dickens